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Title: Lymph Node Yield and Ratio are Prognostic Factors for Survival in Advanced Laryngeal and Hypopharyngeal Malignancies

Body: Introduction: The lymph-node yield and the lymph-node ratio have emerged as important prognostic tools for head and neck cancer. The objective of the present study was to examine the impact of different lymph-node yield cut-offs and the lymph-node ratio on 10-year progression-free and overall-survival.

Methods: A single center cohort study was carried out over a 10-year period (2013-2023). A total of 167 patients met inclusion criteria. Patients met inclusion criteria if they underwent a laryngectomy or pharyngolaryngectomy for a squamous cell carcinoma of the larynx. Data collected included pathological factors, surgical characteristics, margin status, recurrence and overall survival.

Results: The mean age of the cohort was 63.7 years. The larynx was the most common primary site (84%). The mean lymph-node yield was 28 nodes, and the lymph-node ratio was <0.05 and ≥ 0.05 in 25% of cases ($n=41$ and 42 respectively). A lymph-node yield greater than 26 was significantly associated with an improved progression-free and overall survival ($p<0.001$, $p<0.004$). A lymph-node ratio of >0.05 was associated with a worse progression-free and overall survival ($p<0.001$, $p=0.006$). The 10-year overall survival of the cohort was 42%, 55% for patients with a lymph-node ratio of <0.05 , and 23% for those with a ratio ≥ 0.05 ($p=0.001$).

Conclusions: Data from the present study demonstrates a strong associated between lymph-node yield and the lymph-node ratio in survival in laryngeal cancer.

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